



MIAMI TOWNSHIP FIRE & EMS CLERMONT COUNTY, OHIO *PEDIATRIC PROTOCOLS*



PEDIATRIC CRICOTHYROTOMY

Indications

1. Age ≤ 15 .
2. Acute upper airway obstruction, which cannot be relieved using basic airway maneuvers, finger sweep, or endotracheal visualization and Magill forceps removal.
3. Respiratory arrest with facial or neck anatomy or injury, which make bag mask ventilation impossible.

Causes of Upper Airway Obstruction

1. Massive facial trauma.
2. Foreign body aspiration.
3. Laryngoedema.
4. Airway burns.
5. Laryngeal fracture.
6. Epiglottitis.

Complications

1. Bleeding (minimized by puncturing in the lower third of the cricothyroid membrane to avoid vessels).
2. Subcutaneous emphysema.
3. Pneumothorax (from allowing insufficient time for passive exhalation in between breaths)

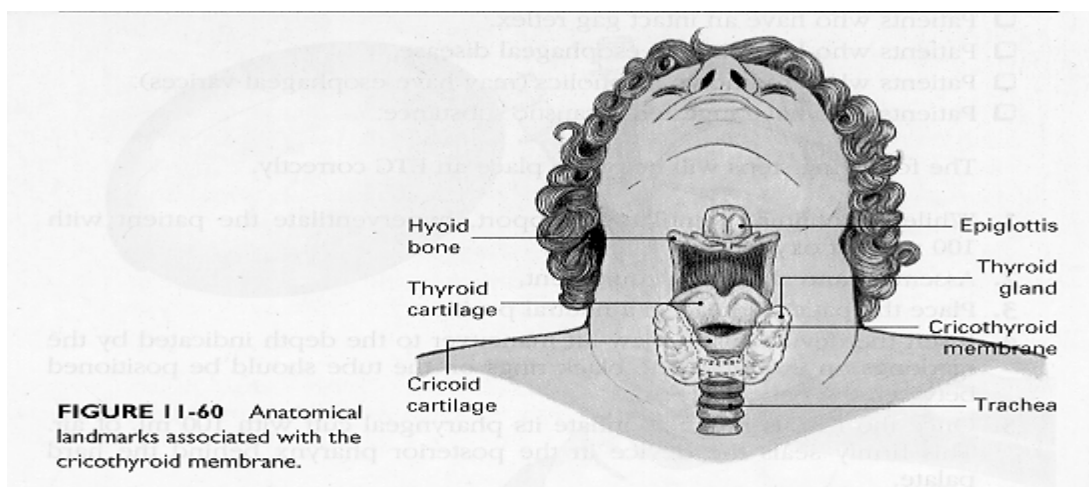


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Protocol

1. Following exposure of the neck, identify the trachea, cricoid cartilage and cricothyroid membrane.
2. Prep the skin, if time permits.
3. Attach a 5 mL syringe with 2-3 mL of normal saline to a 16 or 18 gauge IV catheter.
4. Hold the trachea in place and provide skin tension with the thumb and fingers of the non-dominant hand.
5. Puncture the cricothyroid membrane with the IV catheter attached to the syringe. This should be at a 30-45 degree angle from the skin and directed toward the patient's feet.
6. Advance the needle downward with continual aspiration. The appearance of bubbles confirms tracheal placement. Proceed to slide the cannula off the needle until the hub rests securely on the skin surface.
7. After removing the needle, connect the cannula to the manual jet ventilator and set the manometer to 30 psi. The jet ventilator must be attached to the quick connect DISS outlet on a portable oxygen cylinder or directly to a DISS outlet in the ambulance.
8. Ventilate the patient using 1 second bursts at a rate of 20 breaths per minute.





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Notes:

1. This procedure will allow enough oxygen to be delivered but will not adequately ventilate the patient. The CO₂ level will continue to rise, and this setup must be replaced as soon as possible with another technique which will adequately ventilate the patient.
2. Prepackaged kits to obtain tracheal access using a Seldinger-type technique are available. For example, Pertrach by Pertrach Inc. can be used for pediatric patients with airway obstruction. This type of product should be used only upon the direction of medical command.
3. If the cricothyroid membrane cannot be located, the catheter may be safely inserted in a lower intercartilaginous tracheal space.